Mayor's Clean Water Advisory Panel

Dr. G. Wayne Clough, Chair

Commerce Club Leadership Program

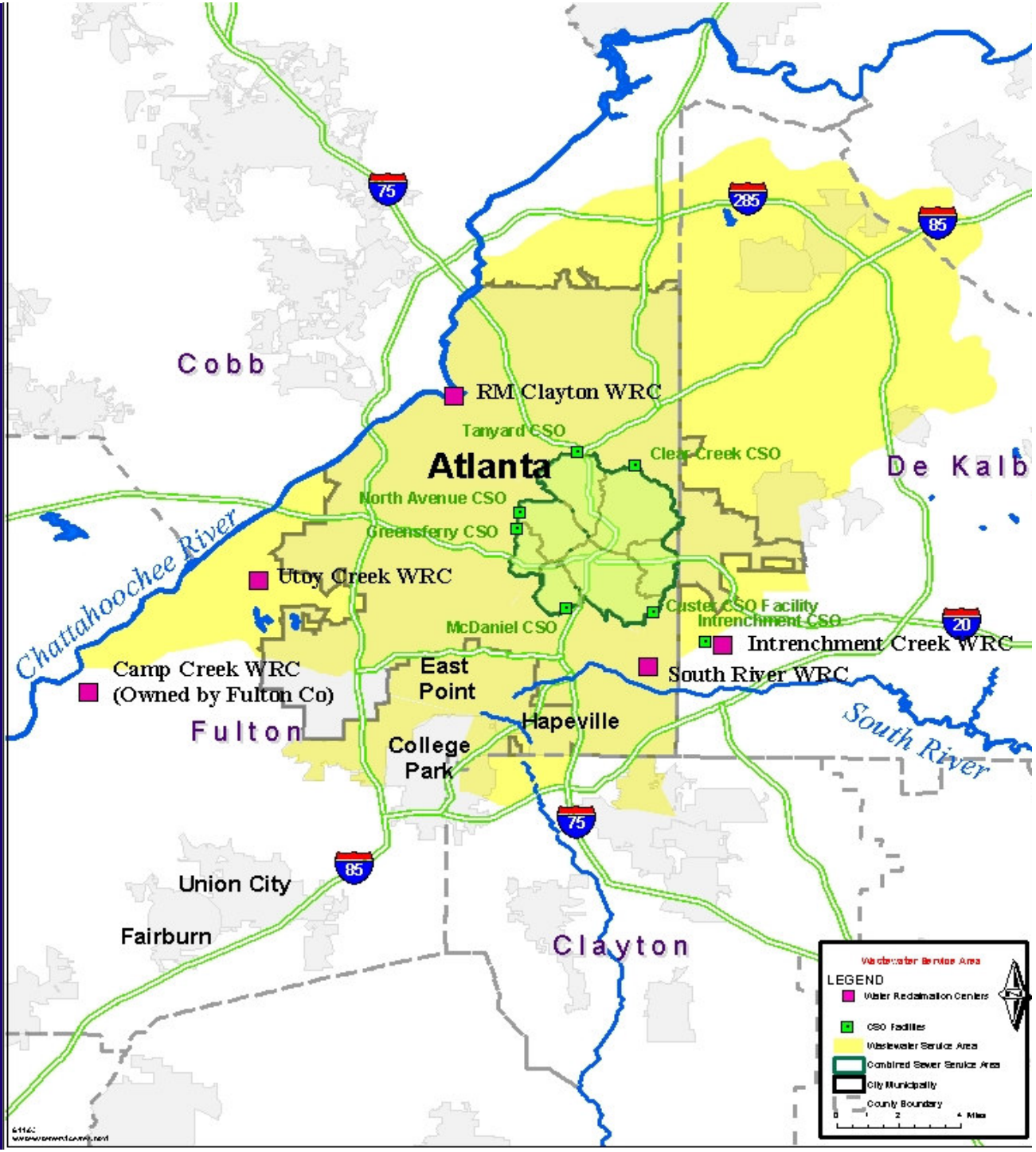
November 10, 2003

Background

- 1,500 miles of sewers; 45% serve 6 other local jurisdictions outside of Atlanta
  - → 85% are separated – primarily in residential areas
  - → 15% are combined – 330 miles primarily in the city's central business district
- 19-square-mile combined sewer area
  - → 106,400 of the city's 416,000 residents
  - → Population of area increases dramatically during business hours

System overview

- Area served by Atlanta's wastewater system
- Combined sewer area



Problems

- "Atlanta is 20 years behind where it should be, and it stands out as an exception to dozens of other major U.S. cities that took action years ago." (panel report)
- Frequent overflows of sewage contaminate the Chattahoochee and feeder streams
- Heavy rain causes flooding in streets, homes, and businesses
- Inadequate monitoring frustrates rational analysis of the issues

Present Conditions

- ⇨During wet weather, wastewater and stormwater combined exceed collection system capacity
- ⇨Combined sewer overflows bypass treatment plants and pass through the 6 CSOs.
- ⇨60 overflows/year average on west side, 20 overflows/year average on east side (east has 34-million gallon storage tunnel)

Clean Water Advisory Panel

- ⇨Nine members
- ⇨Nationally recognized professional experts
- ⇨No political involvements
- ⇨Agreed not to be involved in any City of Atlanta projects
- ⇨Served pro bono

Panel members

- G. Wayne Clough, chair, president of Georgia Tech, civil engineer
- M. Bruce Beck, Wheatley-Georgia Research Alliance Chair of Water Quality and Environmental Systems at the University of Georgia
- John H. Hall, environmental chemist, director of Dolphus E. Milligan Science Research Institute, Atlanta University Center

Panel members, continued

- Jefferson M. Hilliard, civil engineer with 39 years of experience in water, transportation, and geotechnical engineering, San Francisco
- Cecil Lue-Hing, principal of Cecil Lue-Hing and Associates, Inc., in Chicago, an environmental engineering consulting firm
- Michael S. Marcotte, chief engineer of the District of Columbia Water and Sewer Authority

Panel members, continued

- Lawrence H. Roth, deputy executive director and chief operating officer of the American Society of Civil Engineers, Washington, D.C.
- Billy C. Turner, president, the Columbus Water Works, Columbus, Ga.
- Nancy J. Wheatley, two decades of environmental consulting, especially regarding compliance with the Clean Water Act, Boston

Charge to the panel

"The panel shall advise the mayor on technical issues related to the city's plan to address its **combined sewer overflows**."

Charge addressed only one portion of the broader water/sewer issue facing the city:

- ⇨ Review the current CSO plan to meet the federal Consent Decree
- ⇨ Review proposed changes to plan
- ⇨ Compare plan to other alternatives

Timeframe for panel's work

- ⇨Created by administrative order by Mayor Franklin, June 26, 2002
- ⇨Preliminary report due September 15, 2002
- ⇨Final report submitted October 15, 2002

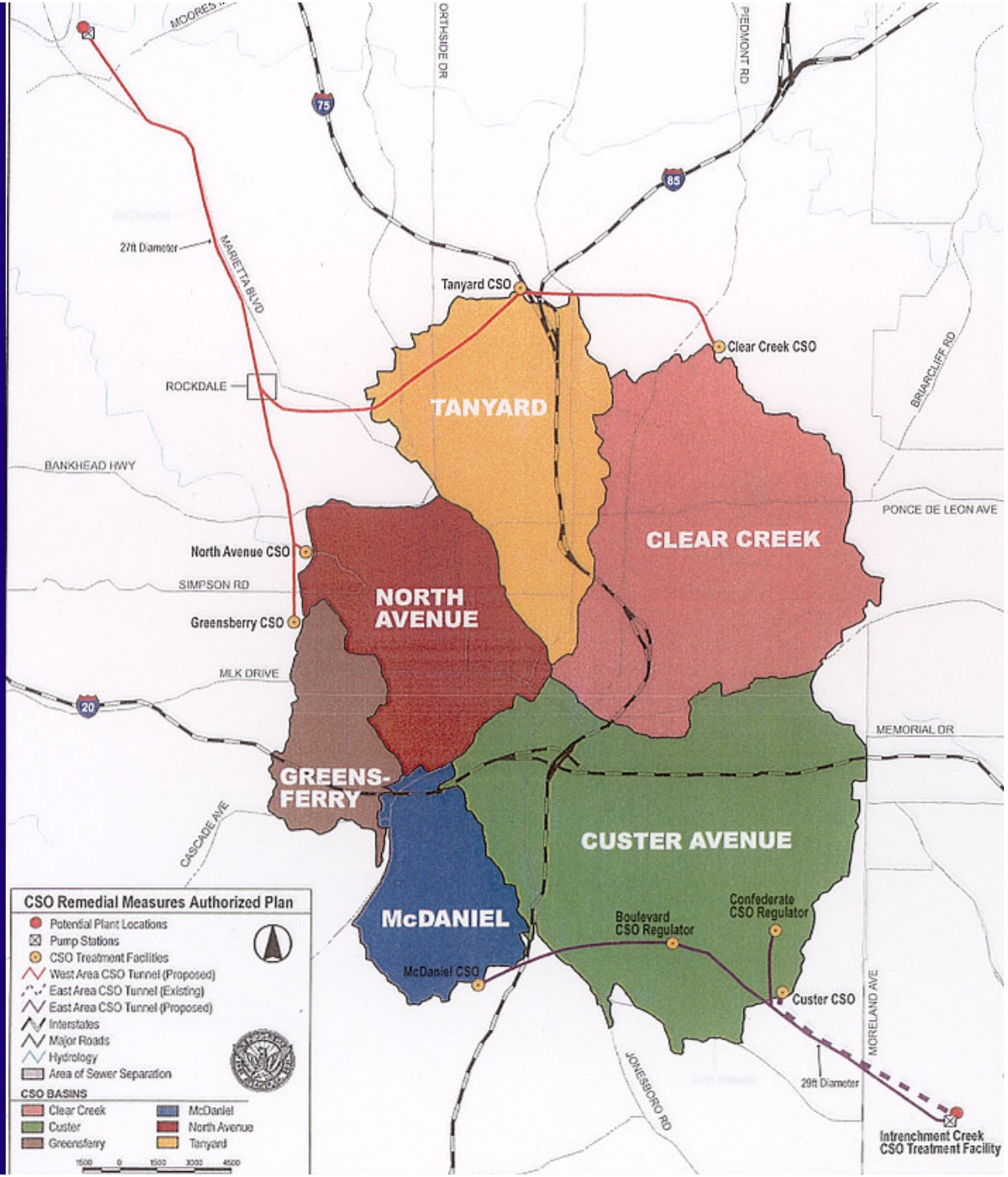
Panel's activities

- Held four all-day meetings:
  - June 28, 2002
  - July 15, 2002
  - August 23, 2002
  - September 13, 2002
- Heard from:
  - City water/sewer administrators and consultants
  - Citizens and Neighborhood Planning Units
  - Other cities who addressed similar problems
  - Environmental agencies/organizations
  - Wastewater treatment experts
- Visited other cities

Present combined sewer area

6 drainage basins

6 facilities to treat combined sewer overflows (CSOs)



7 Plans considered

- ⇨Authorized CSO Remedial Plan
- ⇨0% separation (100% tunnel/treatment)
- ⇨Refinement Option 1 (27% separation)
- ⇨Refinement Option 2 (40% separation)
- ⇨Refinement Option 3 (50% separation)
- ⇨Refinement Option 4 (80% separation)
- ⇨100% separation

NOTE: Percentages refer to the amount of the presently combined 330 miles that would be separated.

Criteria for evaluating plans

- ⇨Cost
- ⇨Quality of water released into the environment (minimum: meet the Consent Decree)
- ⇨Number of CSO facilities required
- ⇨Disruption caused by construction
- ⇨Possibility of completion by Consent Decree deadline (2007)
- ⇨Acceptance by parties to lawsuit
- ⇨Practicality and precedent

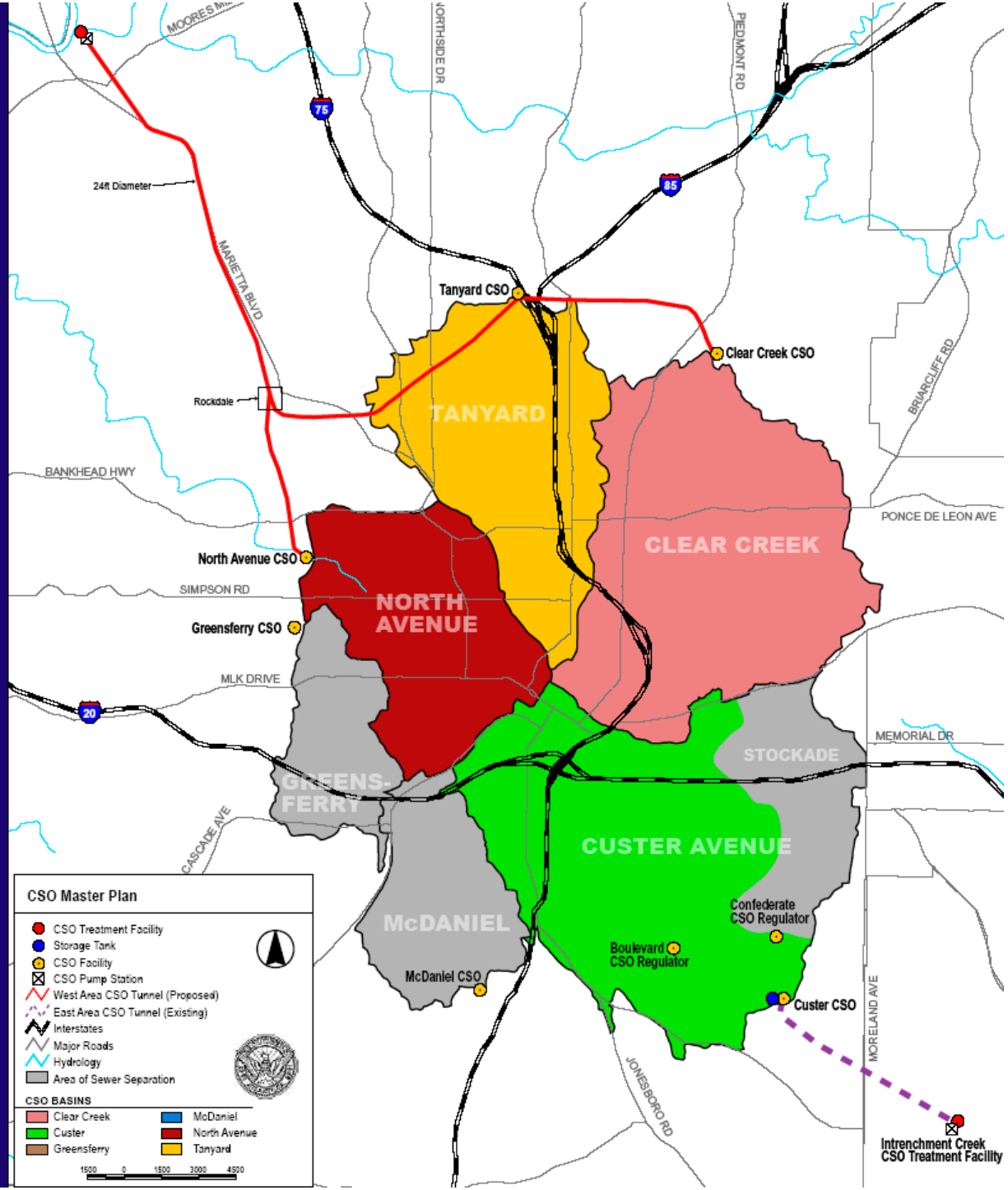
Chose Refinement Option 1

- ⇨Separate sewers in Greensferry and McDaniel Basins and Stockade Sub-basin of the Custer Basin (27% of combined area)
- ⇨Reduce number of CSO facilities from 6 to 4
- ⇨Build deep-rock tunnels to capture overflow and send to 2 new CSO facilities for treatment

Refinement Option 1

4 combined drainage basins

4 facilities to treat CSOs



Reasons for choice

- ⇨Cost effective (lower cost than authorized)
- ⇨Better water quality than the plan authorized in July of 2001
- ⇨Eliminates 2 CSO facilities, including the most frequently offending facility
- ⇨Acceptable construction disruption
- ⇨High probability to complete by consent degree deadline
- ⇨Acceptable to those downstream
- ⇨Avoids further lawsuits and delays

100% separation compared to Refinement Option 1

- ⇨Higher cost
- ⇨Poorer water quality unless pay premium to treat storm water
- ⇨High level of construction disruption in combined sewer areas
- ⇨Cannot be completed by deadline
- ⇨Successful use of retention ponds has only been on a small scale
- ⇨Likely to be unacceptable to those downstream

City's further refinements

- ⇨10 million gallon in-ground storage tank on east side instead of tunnel
- ⇨Reduce west side tunnel from 177 million gallons to 150 million gallons, with modifications at pumping station to speed up treatment of overflow
- ⇨Upgrade Intrenchment Creek facility rather than partially replacing it with new construction

Other recommendations

- ⇨ Staff the initiative at City Hall
  - → Manager to make sure construction is completed successfully
  - → Community relations director
- ⇨ Maintain new facilities properly with trained staff
- ⇨ Improve water quality monitoring
- ⇨ Create greenspace where CSOs are eliminated